UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,404	12/12/2003	Elizabeth Davis	22104	2121

20551 7590 08/23/2005

THORPE NORTH & WESTERN, LLP.
8180 SOUTH 700 EAST, SUITE 200
P.O. BOX 1219
SANDY, UT 84070

EXAMINER	
ROSSI, JESSICA	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,404	DAVIS ET AL.	
	Examiner	Art Unit	
	Jessica L. Rossi	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/7/05, Amendment*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19,22-24 and 26-36* is/are pending in the application.

4a) Of the above claim(s) *22,28 and 35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19,23,24,26,27,29-34 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment dated 6/7/05. Claims 1-18, 20-21 and 25 were cancelled. Claims 30-36 were added. Claims 19, 22-24 and 26-36 are pending but claims 22 and 28 remain withdrawn from further consideration and new claim 35 has been withdrawn from further consideration (see paragraph 4 below).

2. The rejection of claim 24 under 35 U.S.C. 102(b) as being anticipated by Bonnett (US 5194212), as set forth in paragraph 11 of the previous action, has been withdrawn in light of the present amendment; specifically, the reference fails to teach or suggest adhering the fibrous layer 14 to the mold and one reading the reference as a whole would appreciated that the nature of the process teaches away from such.

3. The rejection of claims 19, 23-24, 26-27 and 29 under 35 U.S.C. 103(a) as being unpatentable over Dallum (US 5024342) in view of the collective teachings of Bonnett, Freeman et al. (US 5258159) and Sumner (US 4560607), as set forth in paragraph 13 of the previous action, has been withdrawn in light of the present amendment.

Election/Restrictions

4. Newly submitted claim 35 is directed to an invention (Species A – see previous action) that is independent or distinct from the invention originally claimed (Species B – see previous action).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution

on the merits. Accordingly, claim 35 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

5. Claim 19 is objected to because of the following informalities: --the-- should be inserted before "fibrous material" in the first line of part e). Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 34 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not have support for wrapping another fiber around the vessel and applying a resin matrix to the another fiber and the fibrous material to bond them together. Note the present specification only has support for the another fiber already being impregnated with the resin before applying it to the fibrous material.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 19, 23, 27, 29-34 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 19, it is unclear what is meant by "another fiber with a resin matrix" in part e) since a first fiber with a resin matrix was not claimed. Applicant is asked to clarify. It is suggested to change "another fiber with a resin matrix" to --a fibrous material with a resin matrix--. It is also suggested to change "fiber with a resin matrix" to --fibrous material with a resin matrix-- in line 2 of claim 27. It is also suggested to change "another fiber in a resin matrix" to --the fibrous material with a resin matrix-- in lines 1-2 of claim 30. It is also suggested to change "a fiber in a resin matrix" to --the fibrous material with a resin matrix-- in lines 1-2 of claim 31.

With respect to claim 32, it is unclear what is meant by "another fiber with a resin matrix" in part e) since a first fiber with a resin matrix was not claimed. Applicant is asked to clarify. It is suggested to change "another fiber in a resin matrix" to --the fibrous material with a resin matrix-- in lines 1-2 of claim 33. It is also suggested to change "the another fiber" to --the fibrous material with the resin matrix-- in line 2 of claim 33.

With respect to claim 34, it is unclear what is meant by "another fiber" in part e) since a first fiber was never claimed. Applicant is asked to clarify. It is suggested to change "another fiber" to --another fibrous material-- in the three places that it appears in part e).

Regarding claims 23, 29 and 36 it is unclear if the sheet is the plastic material or if the sheet is separate from the plastic material and it aids in pressing the plastic material onto/into the fibrous material. Applicant is asked to clarify. It is noted that the present specification only has

support for the sheet being the plastic material (see claim 32) and therefore to avoid a 112 1st paragraph issue it is suggested to amend the claims to have them state --wherein the step of disposing a plastic material includes disposing **the plastic material in the form of a plastic sheet** over the mold; and wherein the step of pressurizing includes applying a vacuum to the sheet--.

With respect to claim 34, it recites the limitation "the substantial vessel" in line 1 of part e). There is insufficient antecedent basis for this limitation in the claim. It is suggested to change "vessel" to --enclosure--.

Claim Rejections - 35 USC § 102

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Otani et al. (US 3981955; provided in IDS).

With respect to claim 24, Otani is directed to a method for forming a vessel (column 5, lines 54-55). The reference teaches adhering a bondable layer of fibrous material 8a against the inner surface of a mold M by means of binder 8b to form a substantial enclosure (Figure 3b; column 2, line 65 – column 3, line 4; column 3, lines 25-29; column 6, lines 23-25), introducing a plastic material 8c into the mold and causing the plastic material to conform to the mold to form a substantial enclosure (column 3, lines 5-8; column 6, lines 26-36), heating and pressurizing the plastic material to embed into an exposed portion of the bondable layer in the mold and attaching the bondable layer to the substantial enclosure (Figure 3e; column 5, lines

25-45), and removing the substantial enclosure with the bondable layer from the mold (Figure 3d).

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claims 19, 26-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. in view of Martin (US 3098582).

With respect to claim 19, all the limitations were addressed above with respect to claim 24, except bonding another fiber with a resin matrix to the fibrous material of the bondable layer while removed from the mold.

It is known in the art to form a vessel by winding a resin impregnated fiber strand or by molding resin impregnated fabric where after curing of the resin, the ends of the substantial enclosure are enclosed by molded or pre-formed heads/caps 2, as taught by Martin (column 1, lines 10-21). Martin acknowledges the importance of firmly anchoring the head/cap within the substantial enclosure, after removing the substantial enclosure from the winding mandrel or after removing the substantial enclosure from the mold, and does so by winding/bonding a resin-impregnated fiber strand 8 (= fiber with resin matrix) over/to the outer surface of the substantial enclosure in alignment with the overlapping areas between the head/cap flange 6 and the substantial enclosure (Figures 2-4; column 1, lines 21-39; column 2, lines 3-53).

Therefore, it would have been obvious to the skilled artisan at the time of the invention to insert a head/cap into the opening in the substantial enclosure of Otani after it is removed from the mold and then wind/bond a fiber with a resin matrix over/to the outer surface of the

substantial enclosure in alignment with the overlapping areas between the head/cap flange and the substantial enclosure because such is known in the vessel art, as taught by Martin, where this firmly anchors the head/cap within the substantial enclosure.

Regarding claims 26-27 and 30-31, all the limitations were addressed above.

14. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. and Martin as applied to claims 19 above, and further in view of Kersey et al. (US 5180190; provided in IDS).

With respect to claim 34, all the limitations were addressed above with respect to claim 19, except wrapping the fiber around the substantial enclosure and applying a resin matrix to the another fiber and the fibrous material to bond the another fiber to the fibrous material. Otani in view of Martin is silent as to wrapping the fibrous material 8 around the substantial enclosure and then applying the resin matrix. Applying the resin matrix to the fibrous material before or after the fibrous material is wrapped around the substantial enclosure would have been within purview of the skilled artisan. However, it would have been obvious to apply the resin matrix after applying the fibrous material to the substantial enclosure because such is known in the art, as taught by Kersey (column 4, lines 43-55) where only the expected results would have been achieved.

15. Claims 19, 24, 26-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Otani et al.

With respect to claim 24, Applicant is directed to paragraph 13 above for a discussion of Martin. Although the reference uses the winding technique to form the substantial enclosure when describing the process in a step-by-step manner (column 2, lines 3-53), one reading the

reference as a whole would have appreciated the technique for forming the substantial enclosure is not critical to the invention, and in fact, the reference even mentions molding as an alternative to the winding technique (column 1, lines 15-19). However, Martin fails to disclose any details of the molding process and therefore does not teach adhering the fibrous material 3 against the inner surface of a mold, introducing the resin into the mold and causing it to conform to the mold, and heating and pressurizing the resin to embed into an exposed portion of the fibrous material.

It would have been obvious to the skilled artisan at the time of the invention to use such a molding technique to form the substantial enclosure of Martin because such a molding technique is known in the vessel art, as taught by Otani (see paragraph 11 above for complete discussion), where such a molding technique results in a molded article having improved mechanical strength (Otani, column 6, lines 48-52).

Regarding claims 26-27, Martin teaches wrapping/bonding fibrous layer 8 around/to the substantial enclosure (column 1, lines 35-39; column 2, lines 43-53).

With respect to claims 19 and 30-31, all the limitations were addressed above with respect to claims 24 and 26-27.

16. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Otani et al. as applied to claim 19 above, and further in view of Kersey et al.

With respect to claim 34, all the limitations were addressed above with respect to claim 19, except wrapping the fiber around the substantial enclosure and applying a resin matrix to the another fiber and the fibrous material to bond the another fiber to the fibrous material. Martin is silent as to wrapping the fibrous material 8 around the substantial enclosure and then applying

the resin matrix. Applying the resin matrix to the fibrous material before or after the fibrous material is wrapped around the substantial enclosure would have been within purview of the skilled artisan. However, it would have been obvious to apply the resin matrix after applying the fibrous material to the substantial enclosure because such is known in the art, as taught by Kersey (column 4, lines 43-55) where only the expected results would have been achieved.

17. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of the collective teachings of Freeman et al. (US 5258159; of record) and Freeman (US 4863771) and also in view of Kersey et al.

With respect to claim 34, it is noted that this claim does not require that the bondable layer of fibrous material be adhered to the mold. Therefore, instead of using the molding technique of Otani, it would have been obvious to use a resin transfer molding technique to form the substantial enclosure of Martin where the fibrous material of Martin would be disposed against the inner surface of a mold and then the resin would be disposed into the mold and heated and pressurized causing it to conform to the mold and embed into an exposed portion of the fibrous material because such a molding technique is well known and conventional in the vessel art, as taught by the collective teachings of Freeman '159 (abstract; column 2, lines 5-15; column 3, lines 20-21 and 39-45; column 4, lines 42-65) and Freeman '771 (abstract; column 2, lines 61-68).

18. Claims 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Mack et al. (US 2003/0077965) and Kersey et al.

*It is noted that the present invention is directed to the plastic material being a plastic sheet; however, present claim 36 is not claiming such.

With respect to claims 34 and 36, instead of using the molding technique of Otani or Freeman ('159 and '771), it would have been obvious to the skilled artisan to use a vacuum infusion molding technique to form separate halves of the substantial enclosure of Martin, which can then be joined to form the substantial enclosure, where the fibrous material of Martin would be disposed into the mold and then the resin/plastic would be disposed in the mold along with a plastic sheet (plastic vacuum bag/membrane) and then the resin/plastic would be heated and vacuum would be applied to the plastic sheet so that the plastic sheet pressurizes the resin/plastic causing it to conform to the mold and embed into an exposed portion of the fibrous material because such a molding technique is known in the vessel art, as taught by Mack (Figures 1-2; section [0019], line 4; section [0030]; section [0038]).

Response to Arguments

19. Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

20. It is noted that Applicant made a general argument that all of the references cited in the previous action are directed more towards resin transfer molding where resin is injected into a fibrous material while in a predetermined form. The examiner would just like to point out that the present claims do not exclude such a molding technique, and in fact, Applicant's specification even discloses that resin transfer molding is one of a variety of molding techniques that can be used to form the vessel of the present invention (p. 7, lines 26-27).

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine R. Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jessica L. Rossi
Primary Examiner
Art Unit 1733